Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus for validating the presence of an authorized consumable of a device, the consumable having a first authentication integrated circuit that is configured to store a secret key K_A, the apparatus comprising:

a second integrated circuit which stores the ~~secret~~ public key K_T, and is configured to hold a random number function which returns random number R ~~and is~~, the second integrated circuit being configured to apply a function F[R] to return $F_{KT}[R]$, based on the ~~secret~~ public key K_T, and the first integrated circuit being configured to apply a function $D[F_{KT}[R]]$ to return $D_{KA}[F_{KT}[R]]$, based on the secret key K_A; and

a control system which is configured to request $F_{KT}[R]$ from the second integrated circuit ~~and~~, to request $D_{KA}[F_{KT}[R]]$ from the first integrated circuit to obtain R_A, and to compare ~~$F_K[R]$ from both~~ R returned by the second integrated ~~circuits~~circuit with R_A returned by the first integrated circuit.

2. (Currently Amended) An apparatus as claimed in claim 1, in which the ~~function~~ functions F[R] ~~is a~~ and $D[F_{KT}[R]]$ are one-way ~~function~~functions.

3. (Currently Amended) An apparatus as claimed in claim 1, in which the second integrated circuit is configured to advance R to next in sequence with each invocation of the random number function.

4. (Currently Amended) An apparatus as claimed in claim 3, in which the second integrated circuit includes a linear feedback shift register which ~~defines~~ holds the random number function.

5. (Cancelled)

6. (Currently Amended) A method of validating the presence of an authorized consumable of a device, the method comprising the steps of:

storing a ~~secret~~ public key, K_T, in an integrated circuit of the device and storing a secret key, K_A, in an integrated circuit of the consumable;

generating a random number R with the integrated circuit of the device;

applying a function F[R] to R using K_T at ~~each~~ the integrated circuit of the device to return $F_K[R]$ ~~at each integrated circuit~~ and applying a function $D[F_K[R]]$ to $F_K[R]$ using K_A at the integrated circuit of the consumable to return R_A;

~~requesting $F_K[R]$ from both integrated circuits;~~ and

comparing ~~$F_K[R]$~~ R from ~~both~~ the integrated ~~circuits~~circuit of the device with R_A from the integrated circuit of the consumable.